

AMENDMENTS TO THE CLAIMS

Claims 1-9 (canceled)

Claim 10 (currently amended): A method of screening for one or more compound which affect mRNA stability comprising the steps of: i) providing a DNA expression vector, which in the absence of a test compound is capable of expressing a protein having a detectable signal, wherein the mRNA which is transcribed from said expression vector and encodes said protein comprises at least one copy of a heterologous mRNA instability sequence; (ii) contacting said a DNA expression vector system with at least one test compound under conditions whereby, in the absence of the test compound, said DNA expression system is capable of expressing said expresses a protein having a detectable signal, wherein the mRNA which is transcribed from said expression system and encodes said protein comprises at least one copy of a heterologous mRNA instability sequence comprising one or more coding region determinant (CRD) or a fragment thereof;

(iii) (ii) measuring said detectable signal; and (iv) (iii) comparing the measured detectable signal with a control, wherein a decrease in the measured detectable signal compared to said control indicates a compound that decreases mRNA stability and an increase in the measured detectable signal compared to said control indicates a compound that increases mRNA stability.

Claim 11 (currently amended): The method according to claim 10, wherein said control comprises measuring the detectable signal from the DNA expression vector system in the absence of said test compound.

Claim 12 (currently amended): The method according to claim 10, wherein said control comprises contacting a control expression vector system capable of expressing a second protein having a second detectable signal with the test compound and measuring said second detectable signal.

Claim 13 (original): The method according to claim 10, wherein said compounds are being screened for their ability to induce mRNA degradation, and wherein a decrease in the measured detectable signal compared to said control indicates a compound that induces mRNA degradation.

Claims 14-17 (canceled)

Claim 18 (currently amended): A high throughput method for screening libraries of compounds to identify compounds that affect the stability of mRNA comprising: (i) providing a stably transfected cell line comprising a DNA expression vector, which in the absence of a test compound is capable of expressing a protein having a detectable signal, wherein the mRNA which is transcribed from said expression vector and encodes said protein comprises at least one copy of a heterologous mRNA instability sequence; (ii) inoculating wells of one or more multi-well plates comprising a growth medium with said cell line a stably transfected cell line comprising a DNA expression vector, which in the absence of a test compound expresses a protein having a detectable signal, wherein the mRNA which is transcribed from said expression vector and encodes said protein comprises at least one copy of a heterologous mRNA instability sequence comprising one or more coding region determinant (CRD) or a fragment thereof; (iii) (ii) maintaining said one or more multi-well plates under conditions that allow cells of said cell line to grow and express said protein having a detectable signal; (iii) (iv) contacting the cells with one or more test compound; (v) (iv) measuring said detectable signal; and (v) (vi) comparing the measured detectable signal with a control; wherein a decrease in the measured detectable signal compared to said control indicates a compound that decreases mRNA stability and an increase in the measured detectable signal compared to said control indicates a compound that increases mRNA stability.

Claims 19-22 (canceled)

Claim 23 (new): The method of claim 10, wherein said heterologous mRNA instability sequence is derived from a naturally occurring source gene.

Claim 24 (new): The method of claim 23, wherein said naturally occurring source gene encodes a protein which is implicated in a disease of interest.

Claim 25 (new): The method of claim 24, wherein said naturally occurring source gene is c-myc.

Claim 26 (new): The method of claim 10, wherein said heterologous mRNA instability sequence is inserted into the 3'UTR of the gene encoding the protein having a detectable signal.

Claim 27 (new): The method of claim 23, wherein said heterologous mRNA instability sequence further comprises DNA corresponding to the regions that flank said CRD or fragment thereof in the naturally occurring source gene or mRNA.

Claim 28 (new): The method of claim 27, wherein said heterologous mRNA instability sequence is inserted into the 3'UTR of the gene encoding the protein having a detectable signal.

Claim 29 (new): The method of claim 10, wherein said protein having a detectable signal is an enzyme.

Claim 30 (new): The method of claim 29, wherein the enzyme is luciferase or β -galactosidase.

Claim 31 (new): The method of claim 29, wherein said protein having a detectable signal is a fluorescent or phosphorescent protein.

Claim 32 (new): The method according to claim 18, wherein said control comprises measuring the detectable signal from the stably transfected cell line in the absence of said test compound.

Claim 33 (new): The method according to claim 18, wherein said stably transfected cell line comprises a second DNA expression vector capable of expressing a second protein having a second detectable signal, and wherein said control comprises measuring the second detectable signal.

Claim 34 (new): The method according to claim 18, wherein said compounds are being screened for their ability to induce mRNA degradation, and wherein a decrease in the measured detectable signal compared to said control indicates a compound that induces mRNA degradation.

Claim 35 (new): The method of claim 18, wherein said heterologous mRNA instability sequence is derived from a naturally occurring source gene.

Claim 36 (new): The method of claim 35, wherein said naturally occurring source gene is c-myc.

Claim 37 (new): The method of claim 18, wherein said heterologous mRNA instability sequence is inserted into the 3'UTR of the gene encoding the protein having a detectable signal.

Claim 38 (new): The method of claim 35, wherein said heterologous mRNA instability sequence further comprises DNA corresponding to the regions that flank said CRD or fragment thereof in the naturally occurring source gene or mRNA.

Claim 39 (new): The method of claim 38, wherein said heterologous mRNA instability sequence is inserted into the 3'UTR of the gene encoding the protein having a detectable signal.